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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/940,786 | 08/29/2001 | Kazutaka Katayama | 010938 | 4591 |
| 23850 | 7590 | 01/12/2004 | EXAMINER | |
| ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006 | | | EASHOO, MARK | |
| | | ART UNIT | | PAPER NUMBER |
| | | 1732 | | 7 |

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/940,786 | KATAYAMA ET AL. |
| | Examiner | Art Unit |
| | Mark Eashoo, Ph.D. | 1732 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 14 October 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1 and 2 is/are rejected.

7) Claim(s) 3-10 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

 1. Certified copies of the priority documents have been received.

 2. Certified copies of the priority documents have been received in Application No. _____.

 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-4.

4) Interview Summary (PTO-413) Paper No(s). _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of claim group I, claims 1-10, in Paper No. 6 (filed 14-OCT-2003) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 11-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claim group II, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Information Disclosure Statement

The information disclosure statements filed 29-NOV-2001 and 28-JAN-2002 comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Accordingly, they have been placed in the application file and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ainsworth et al. (US Pat. 6,261,657) in view of Markham et al. (US Pat. 4,603,158) and Lau et al. (EP 0 921 152 A2).

Regarding claim 1: Ainsworth et al. teaches the basic claimed process of forming a fuel hose (1:5-21), comprising: extruding a protector/outer layer over an underlying/inner layer (5:38-60). Ainsworth et al. also teaches that EPDM (ie. ethylene-propylene-diene rubber) is known to those skilled in the art as a material in an outer/protector layer (5:38-60).

Ainsworth et al. does not teach EPDM filled with silica and co-polymerized with an acrylate-based monomer. Nonetheless, Markham et al. teaches EPDM (3:25-4:28) filled with silica (4:29-60) and co-polymerized with an acrylate-based monomer (8:25-9:2). At the time of invention a person having ordinary skill in the art would have found it obvious to have used EPDM filled with silica and co-polymerized with an acrylate-based monomer, as taught by Markham et al., in the process of Ainsworth et al., and would have been motivated to do so because Markham et al. teaches that such material composition produces a chemically inert and moderately heat resistant and a wide range of flexibility (3:5-25). A person having ordinary skill in the art would find these material properties desirable in a fuel hose.

Ainsworth et al. does not teach UV-radiation curing of EPDM. Nonetheless, Lau et al. teaches UV-radiation curing of EPDM (3:43-55 and 4:6-8). At the time of invention a person having ordinary skill in the art would have found it obvious to have used UV-radiation curing of EPDM, as taught by Lau et al., in the process of Ainsworth et al., and would have been motivated to do so in order to provide a faster curing rate and thereby speed production (9:53-57). It is noted that Lau et al. also teaches silica (3:25-30) and co-curing with acrylated-monomers (Tables II, III, and IV).

Regarding claim 2: Markham et al. further teaches co-curing agents (ie. acrylates) in the range of 0-20 parts (8:25-66) and silica in the range of 10-80 parts (Table 4). Similarly, Lau et al. teaches a low concentration of photoinitiator in the range of 0.01 to 5 percent (3:50-55). Lau et al. and Markham et al. would have been combined with Ainsworth et al. for the same reasons as set forth above.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cornell et al., Katayama et al., Gros, and Kanbe et al. all teach the basic state of the art.

Allowable Subject Matter

Claims 3-10 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 3 and 4 recite a protector layer comprising EPDM filled with silica and co-polymerized with: 1) an acrylate-based monomer; 2) a resorcinol compound; and 3) a melamine resin. Although resorcinol and melamine are well known materials in the molding art, the prior art of record does not teach forming the instantly claimed co-polymerized compound as a protective layer of a fuel hose.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Eashoo, Ph.D. whose telephone number is (571) 272-1197. The examiner can normally be reached on 7am-3pm EST, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Mark Eashoo, Ph.D.
Primary Examiner
Art Unit 1732



me
January 5, 2004